



BUILDING TRAINING SOLUTIONS
FOR THE IT WORLD

Developing Windows Applications with Microsoft Visual Studio 2010

Days: 5

Format: Instructor-Led

Class Code 10262

Certification Exams:

Certification Track:

Recommended Course Sequence

Knowledge of prerequisites
noted below.

*Course content is subject to change
without notice.*

Course Description:

In this course, experienced developers who know the basics of Windows Forms development gain more advanced Windows Client design and development skills. WinForms and WPF programming models, as well as relative strengths and when to use each technology, are covered.

Target Student:

This course is intended for Technology Specialists in the area of Windows Client Development who work in a development environment that uses Microsoft Visual Studio .NET 2010 and Microsoft .NET Framework 4.0 to create rich client applications for Windows.

Delivery Method:

Instructor led, group-paced, classroom-delivery learning model with structured hands-on activities.

At Course Completion:

After completing this course, students will be able to:

- Understand how varying business requirements influence the design decisions when planning a Windows Client application.
- Understand the new features of Visual Studio 2010 WPF
- Design and build a UI that provides the expected end-user experience and UI functionality
- Create a consistent and manageable user interface
- Understand best practices when testing and learn how to debug their applications
- Use advanced exception handling in Windows Client application scenarios
- Implement advanced data binding scenarios
- Use coding techniques to improve the responsiveness of their applications
- Implement localization, user assistance, and accessibility features within an application
- Understand the basics of graphics in WPF
- Customize controls and introduce students to custom controls
- Implement application behaviors based on user actions or events by using attached properties and Expression Blend behaviors
- Develop data visualization within their applications in a manner that enables the application user to drill down into data visually
- Manage application state and settings throughout the application lifecycle
- Deploy their applications using the various methods supported by Visual Studio 2010

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Course Outline

Module 1: Windows Client Application Design

The goal of this module is to ensure that students understand how varying business requirements influence the design decisions when planning a Windows Client application. Students will learn how design requirements, specifications, and business goals affect the choice between WPF and Windows Forms when updating (or planning a new) Windows Client application.

Lessons
<ul style="list-style-type: none">Windows Client TechnologiesArchitectural PatternsInteroperability between Windows Forms and WPF
Lab : Planning Windows Client Applications
<ul style="list-style-type: none">Identify Windows Client TechnologiesChoosing Design PatternsLab Application Guided Walk-Through

Module 2: Introduction to Visual Studio 2010 and WPF Version 4

The goal of this module is to introduce students to the new features that Visual Studio 2010 and WPF version 4 provide.

Lessons
<ul style="list-style-type: none">What's New in Visual Studio 2010?What's New in WPF Version 4
Lab : Guided Tour of Visual Studio 2010 and XAML
<ul style="list-style-type: none">Guided tour of Visual Studio 2010Guided tour of XAML Editor

Module 3: Designing and Developing a User Interface

The goal of this module is to teach the student how to design and build a UI that provides the expected end-user experience and UI functionality, and retains that experience/functionality in various end-user environments, as well as when the application window resizes.

Lessons
<ul style="list-style-type: none">Defining Page LayoutUsing Content ControlsUsing Item ControlsSharing Logical Resources in a Window
Lab : Building a User Interface
<ul style="list-style-type: none">Choosing User Interface ControlsLaying out the User InterfaceCreating and Using Resource Dictionaries

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Module 4: Taking Control of the User Interface

The goal of this module is to enable students to create a consistent and manageable user interface.

Lessons
<ul style="list-style-type: none">■ Sharing Logical Resources in an Application■ Creating Consistent User Interfaces by Using Styles■ Changing the Appearance of Controls by Using Templates■ Handling Events and Commands
Lab : Dynamically Controlling the User Interface
<ul style="list-style-type: none">■ Creating Styles■ Using Application Commands■ Adding Routed Events■ Creating a Custom Command■ Migrating a Custom Command

Module 5: Testing, Unit Testing, and Debugging

The goal of this module is to help students to develop good habits in regard to testing as well as enabling students to debug their applications. Students will also learn about advanced exception handling pertaining directly to Windows Client application scenarios

Lessons
<ul style="list-style-type: none">■ WPF Testing Strategies■ Debugging XAML■ Providing User Feedback for Unhandled Exceptions■ Understanding Security Features
Lab : Testing and Debugging WPF Applications
<ul style="list-style-type: none">■ Unit Testing Strategy■ Unit Testing WPF Applications■ Debugging Applications in Visual Studio 2010■ Advanced Exception Handling

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Module 6: Simple Data Binding and Validation

The goal of this module is to teach the student how to implement simple data binding and data validation in order to manage data in a data source (CRUD). In addition to learning how to bind a value to a UI element, the student should learn best practices concerning when to use the various implementations of data binding and how to connect to a data source with LINQ.

Lessons
<ul style="list-style-type: none">■ Overview of Data Binding■ Creating a Data Binding■ Implementing Property Change Notification■ Converting Data■ Validating Data■ Presenting Data at Design Time
Lab : Data Binding
<ul style="list-style-type: none">■ Binding Controls■ Implementing Value Converters■ Validating Data■ Implementing Property Change Notifications

Module 7: Data Binding to Collections

The goal of this module is to enable the student to implement more advanced data binding scenarios, picking up where the previous module on data binding left off. The student will learn how to bind to ListView, GridView, DataGrid, and other collection classes.

Lessons
<ul style="list-style-type: none">■ Binding to Collections of Objects■ Using Collection Views■ Creating Master-Detail User Interfaces■ Using Data Templates■ Presenting Design Time Data Collections
Lab : Data Binding to Collections
<ul style="list-style-type: none">■ Binding to Collections of Data■ Using Collection Views■ Creating Master-Detail User Interfaces■ Using Data Templates

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Module 8: Enhancing UI Responsiveness

The goal of this module is to teach the students how coding techniques can be used to improve the responsiveness of their applications.

Lessons
<ul style="list-style-type: none">■ Implementing Asynchronous Processes■ Implementing Responsive User Interfaces
Lab : Enhancing Application Performance
<ul style="list-style-type: none">■ Asynchronous Programming Strategy■ Asynchronous Programming■ Parallelizing Tasks

Module 9: Integrating Localization and User Assistance Features

The goal of this module is to teach students how to implement localization, user assistance, and accessibility features within an application.

Lessons
<ul style="list-style-type: none">■ Localization and Globalization■ Implementing User Assistance Features■ Providing User Accessibility Features
Lab : Localizing a WPF Application
<ul style="list-style-type: none">■ Preparing for Localization for the LocBAML Approach■ Localizing Resources by Using LocBAML■ Preparing for Localization by Using Strongly Typed Resources■ Localizing Resources by Using Strongly Typed Resources■ Choosing a Localization Approach

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Module 10: WPF 2D Graphics, Multimedia, and Printing

The goal of this module is to teach the students the basics of graphics in WPF. The module will also provide an overview of multimedia (audio and video).

Lessons
<ul style="list-style-type: none">■ Displaying 2D Graphics■ Displaying Images■ Adding Multimedia to WPF Applications■ Creating and Printing Documents
Lab : Drawing 2-D Graphics
<ul style="list-style-type: none">■ Identify the Appropriate Windows Client Technology■ Creating the Data Access Layer and User Interface■ Drawing Shapes, Painting with Brushes and Applying Effects■ Adding Images

Module 11: Control Customization

The goal of this module is to teach students how to customize controls and introduce students to custom controls.

Lessons
<ul style="list-style-type: none">■ Overview of Control Authoring■ Creating User Controls■ Creating Custom Controls■ Managing Control Appearance by Using Visual States■ Integrating WPF and Windows Forms
Lab : Building a User Control
<ul style="list-style-type: none">■ Identify the Approach Control Type■ Creating a User Control in WPF■ Adding a WPF Control to a Windows Forms Application

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Module 12: Attached Properties and Behaviors in WPF

The goal of this module is to teach the students how to implement application behaviors based on user actions or application events by using attached properties and Expression Blend behaviors.

Lessons
<ul style="list-style-type: none">■ Implementing Attached Properties■ Implementing Drag-and-Drop User Interfaces■ Implementing Expression Blend Behaviors, Triggers and Actions
Lab : Implementing Drag-and-Drop Operations
<ul style="list-style-type: none">■ Implementing Drag-and-Drop Operations■ Implementing Expression Blend Behaviors

Module 13: Animations in WPF

The goal of this module is to teach the student how to implement animations and to teach students how to develop data visualization within their applications in a manner that enables the application user to drill down into data visually. Students should also learn when animations should be used and why.

Lessons
<ul style="list-style-type: none">■ Using Animations■ Using Triggers■ Implementing Data Visualizations
Lab : Creating Animations
<ul style="list-style-type: none">■ Creating Animations Declaratively■ Creating Animations Dynamically■ Creating Routed Events■ Handling Routed Events

Module 14: Application State, Settings, and Lifecycle

The goal of this module is to teach students how to manage application state and settings throughout the application lifecycle.

Lessons
<ul style="list-style-type: none">■ Creating Application Settings■ Consuming Application Settings■ Creating Custom Configuration Sections
Lab : Creating a Settings Dialog
<ul style="list-style-type: none">■ Creating Application and User Setting by Using Visual Studio■ Creating a Dialog Window■ Reading and Writing Settings■ Consuming Settings Properties

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Module 15: Configure and Deploy Windows Client Applications

The goal of this module is to teach students how to deploy their applications using the various methods supported by Visual Studio 2010.

Lessons	
<input type="checkbox"/>	Deployment Options
<input type="checkbox"/>	Deploying a Standalone WPF Application
<input type="checkbox"/>	Deploying an XBAP Application
<input type="checkbox"/>	Configuring Security Settings
Lab : Deploying Applications	
<input type="checkbox"/>	Developing a Standalone Installer
<input type="checkbox"/>	Configuring a ClickOnce Deployment
<input type="checkbox"/>	Updating a ClickOnce Deployment